

**REMARKS**

The Final Office Action issued November 29, 2001 and the Advisory Action issued June 17, 2002 have been reviewed and the comments of the U.S. Patent and Trademark Office have been considered. Claims 17-19 have been canceled in a Preliminary Amendment filed on April 29, 1999. Claim 16 has been canceled and claim 24 has been added by entry of the Amendment After Final filed on May 29, 2002. Claims 25-61 have been added by this Preliminary Amendment. Accordingly, Applicants request reconsideration of the pending claims 1-15 and 20-61.

Applicants reiterate their appreciation for the opportunity granted by Examiner to address the merits of the claimed invention at the personal interview of May 13, 2002. As noted in the Amendment After Final filed May 29, 2002, it was agreed that a sidewall sprinkler having a K factor greater than 9 with at least each of the following features is patentable such that the prior art rejection set forth in the Final Office Action appears to be overcome. The features are: (1) a deflector with a flat canopy; (2) frame arms of the sprinkler body located on a plane that is parallel to the flat canopy and intersecting an axis of the sprinkler (e.g., on a horizontal plane); (3) a deflector with only two support arms for a flat canopy; (4) a deflector with only two support arms for a flat canopy with a single window or flow opening between the two support arms; and (5) a deflector with two support arms for a flat canopy, the arms spaced at 1.5 inches or more. These features are supported by the originally filed specification at, for example, at page 8 (flat canopy); at pages 10-11 (horizontal frame arms); at page 8, Figs. 5, 6, 10 and 11 (only two frame arms); and at page 9 and Figs. 3-6 (spacing of arms). Therefore, Applicants have added new claims 24-29, which include the features specifically identified by the Examiner above and submit that claims 24-29 are allowable over the prior art of record. Claims 30-61 have also been added to more particularly point out and distinctly claim the invention. Support for new claims 30-61 is also provided in the originally filed specification at, for example, pages 6-11 and Figs. 1-14.

In particular, it is noted that the claimed dimensions of the support arms and canopy are supported by the originally filed specification, which states, at page 9, lines 6-17, that the

components in Figures 3-6 are to scale *relative to each other* and that the canopy is about 2 inches wide and about 1.1 inches in length. And an identification of the scaling relationship between components in the written description rather than in the drawings is appropriate because 37 C.F.R. § 1.84(k) prohibits an indication of a scaling factor of the drawings. Therefore, one skilled in the art would be able to determine the dimensions of other components in the “to scale” component drawings from reading the specification and using an engineer’s scaling ruler, regardless of the actual size of the whole drawings. That is, irrespective of the magnification or reduction of originally filed Figs. 3-6, the dimensions of each of the components can be determined because the components are accurately scaled relative to a referential datum (i.e., the canopy portion) as described in the specification. Accordingly, the feature of the two arms spaced apart at 1.5 inches or more, as recited in new claims 30, 41 and 48, is supported by the originally filed written description and drawings of Figs. 3-6.

Claims 1-16 and 20-23 stand rejected under 35 U.S.C. §103 as being unpatentable over U.S. Patent No. 4,296,816 to Fischer in view of U.S. Patent 5,810,263 to Tramm. Applicants respectfully traverse this rejection because Fischer or Tramm, singularly or in combination, fails to teach or suggest the claimed invention as a whole. Applicants respectfully maintain that the proposed combination fails to teach or suggest the claimed invention as a whole, and reiterate that position with the following remarks.

Fischer shows a sidewall sprinkler but fails to state a K-factor for the sprinkler. Applicants have submitted data sheets for sprinklers covered by this patent. *See, e.g.,* Grinnell Corporation, “Horizontal Sidewall Sprinkler, 140° F RES/QR-EC & 165°F RES/QU-EC/EC Model FR-1 FAST RESPONSE SOLDER TYPE, 17/32” (20MM) ORIFICE,” (March 1995, pg. 8), *in* Information Disclosure Statement, August 21, 2001. Each of the submitted data sheets specifies that the K-factor for the sprinkler covered by the Fischer patent is less than 9. Furthermore, Mr. Golinveaux has filed declarations stating that at no time prior to the filing date of the above captioned application did Fischer build or test a sidewall sprinkler with a K factor greater than 9. And Applicants are unaware of any sidewall sprinkler with a K factor greater than 9 that has been commercialized. *See, e.g.,* Golinveaux Supplemental Declaration, ¶ 7 (July 3,

2001). Notwithstanding the deficiency of Fischer, the Office Action relies on Tramm in an attempt to modify Fischer so as to reach the claimed invention as a whole. Tramm, however, provides no suggestion to modify Fischer to a K factor greater than 9 with a reasonable expectation of success. Therefore, the proposed modification to Fischer in view of Tramm fails to reach the claimed invention as a whole. Accordingly, claims 1 and 20 are patentable over Fischer or Tramm, singularly or in combination thereof.

Applicants have added new claims 24-61 to more particularly point out and distinctly claim their invention. As indicated earlier, claims 24-29 appear to have overcome the prior art rejection based on recitation of at least one of the five features addressed during the interview with the Examiner. As to newly added independent claims 42, 45-47, 48, 50, 55, 57 and 59, these claims recite other features that are not taught or suggested by Fischer or Tramm, singularly or in combination.

Specifically, each of the independent claims 42, 45-47 and 48 recites, *inter alia*, a passageway with a K-factor greater than 9. In addition to the K-factor, independent claim 42 recites a particular configuration of the canopy and density of water provided by the sprinkler; claim 45 recites a horizontal orientation of the sprinkler; claim 46 recites a vertical orientation with only two support arms for the canopy portion; and claim 47 recites a canopy portion of a deflector with only two support arms defining a single opening; and claim 48 recites a single opening between only two arms spaced apart between their proximal surfaces by at least 1.5 inches.

Additionally, independent claims 50 and 55 have been added to recite, respectively, a fire protection system. In particular, claim 50 recites a fire protection system having at least one sprinkler with a flat canopy portion; and claim 55 recites a system with means for distributing fluid at a flow rate of at least 38 gallons per minute at a density of at least 0.15 gallons per minute per square feet upon actuation of a sprinkler with a K-factor greater than 9.

Finally, claims 57 and 59 have been added to recite, respectively, a fire protection method. Each of the independent claims 57 and 59 recites locating a tubular body near an area to be protected and providing a water supply to deliver water at 38 gallons per minute or greater to be dispersed over the area at a density of 0.15 gallons per minute per square feet or greater. Applicants respectfully submit that none of the features recited, respectively, in claims 24, 25, 42, 45-48, 50, 55, 57 and 59 are taught or suggested by Fischer or Tramm. Accordingly, claims 42, 45-48, 50, 55, 57 and 59 are patentable.

Claims 2-15, 21-23, 26-41, 43, 44, 49, 51-54, 56, 58, 60 and 61, which depend ultimately from one of claims 1, 20, 24, 25, 42, 45-48, 50, 55, 57 and 59, are also allowable at least because claims 1, 20, 24, 25, 42, 45-48, 50, 55, 57 and 59 are allowable, as well for reciting additional features.

In view of the foregoing amendments and remarks, Applicants respectfully request the reconsideration and reexamination of this application and allowance of the pending claims 1-15 and 20-61. Applicants respectfully invite the Examiner to contact the undersigned at 609.919.6644 if there are any outstanding issues that can be resolved via a telephone conference.

**EXCEPT** for issue fees payable under 37 C.F.R. §1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. §§1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account No. 50-0310. This paragraph is intended to be a **CONSTRUCTIVE PETITION FOR EXTENSION OF TIME** in accordance with 37 C.F.R. §1.136(a)(3).

Respectfully submitted,

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